

Supplementary Information

The role of tumor model in magnetic targeting of magnetosomes and ultramagnetic liposomes

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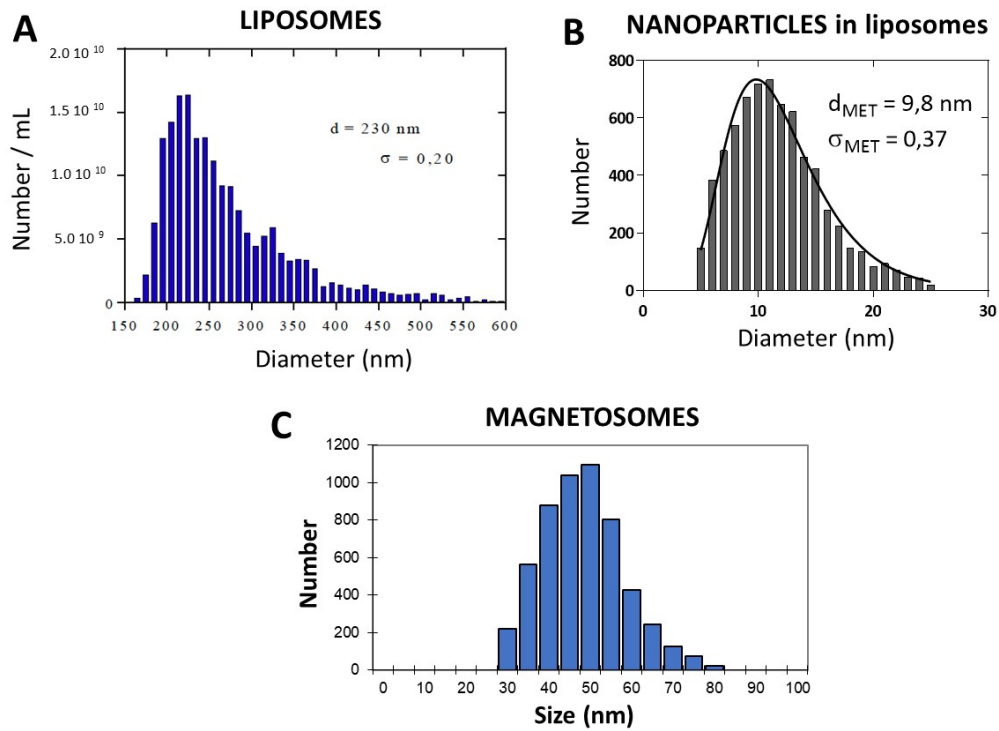


Figure 1. Size distribution of ultramagnetic liposomes and magnetosomes. A) Size distribution of liposomes, measured at the single particle level by Tunable Resistive Pulse Sensing. B) and C) Size distribution of the encapsulated nanoparticles within the liposomes and of magnetosomes, respectively, both quantified from TEM images.

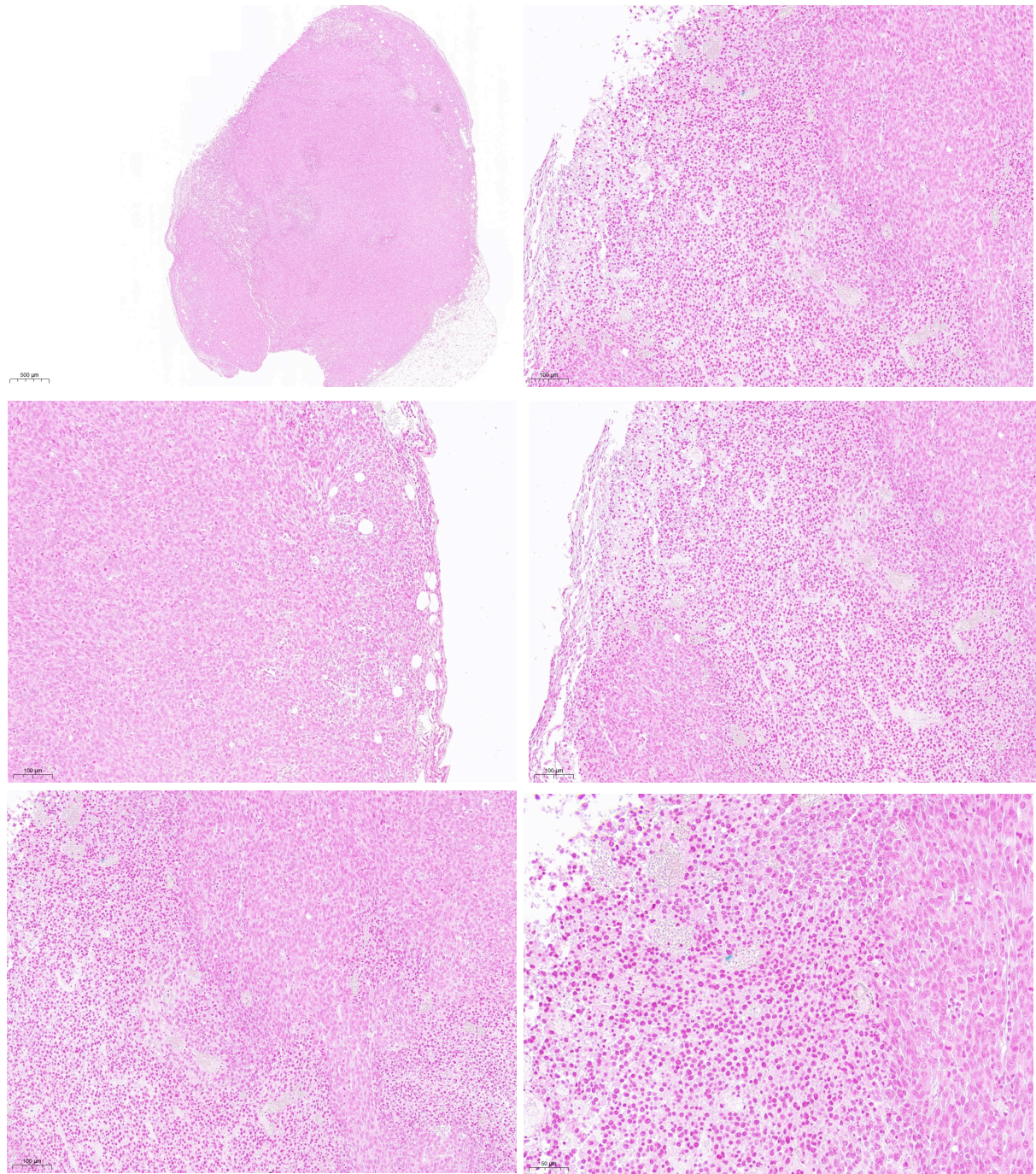


Figure 2. Histological Prussian Blue tissue staining of subcutaneous tumor models after intravenous administration of ultramagnetic liposomes and upon magnet application.

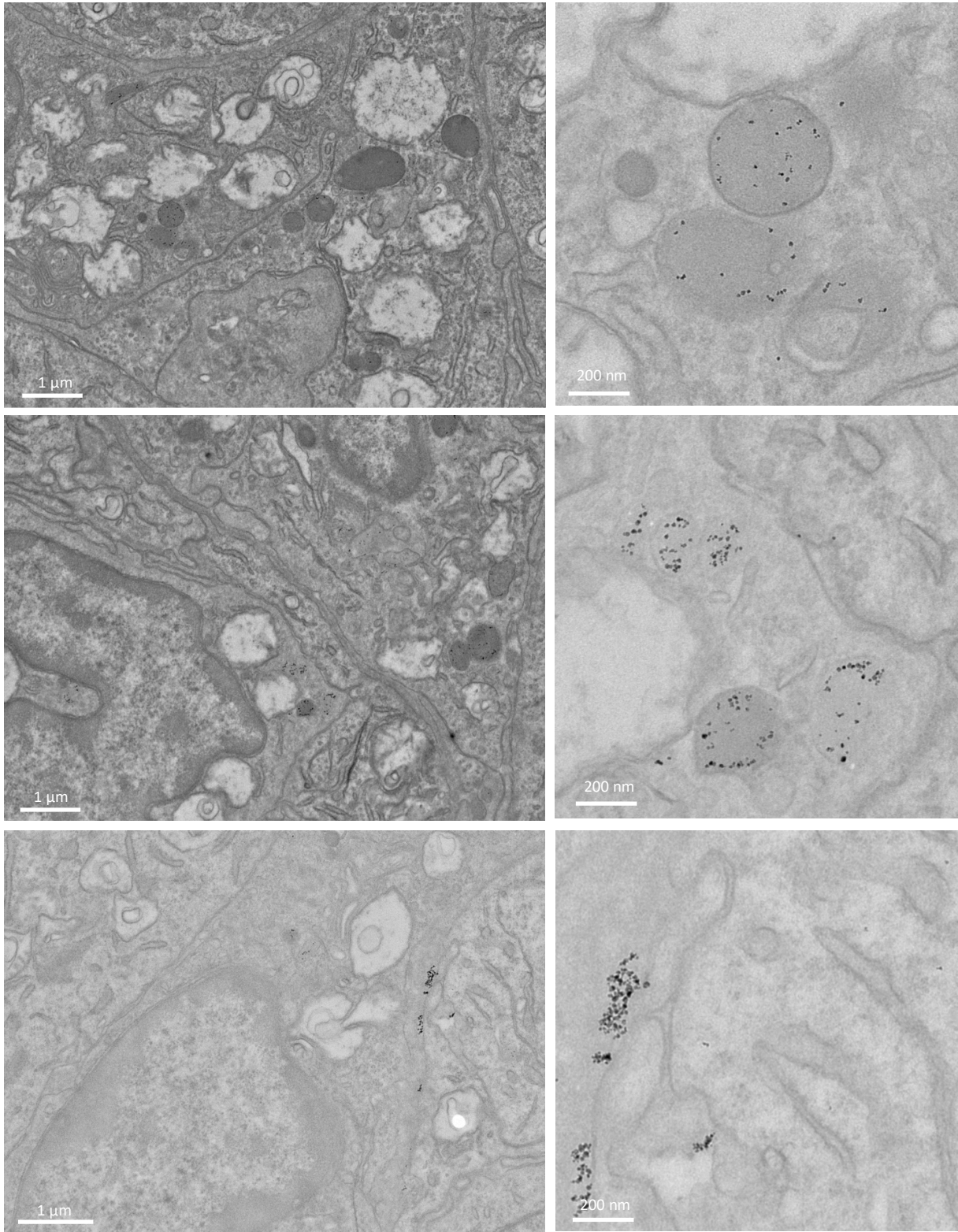


Figure 3. Transmission electron microscope imaging of orthotopic tumor models after intravenous administration of ultramagnetic liposomes and upon magnet application.

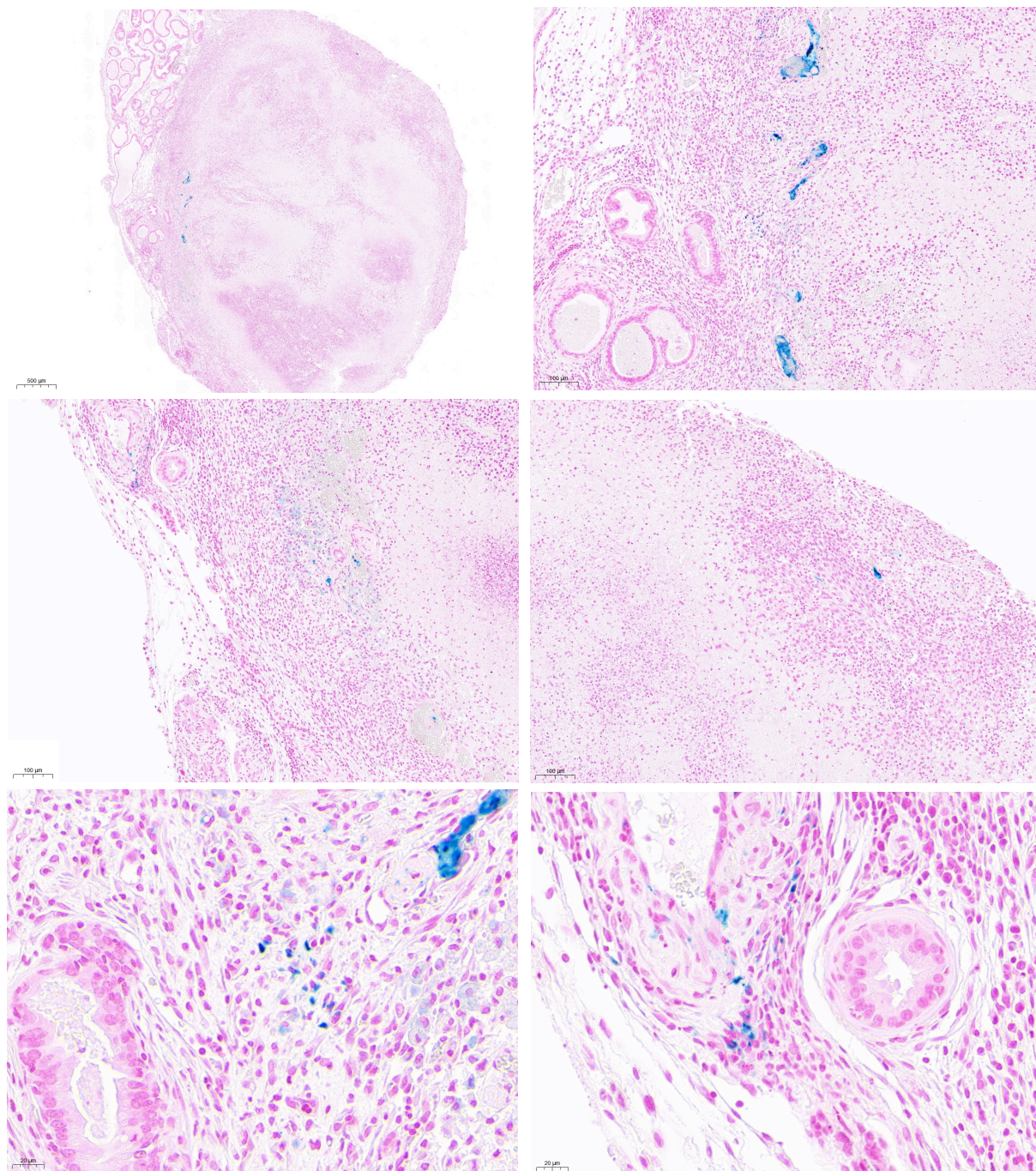


Figure 4. Histological Prussian Blue tissue staining of orthotopic tumor models after intravenous administration of ultramagnetic liposomes and upon magnet application.

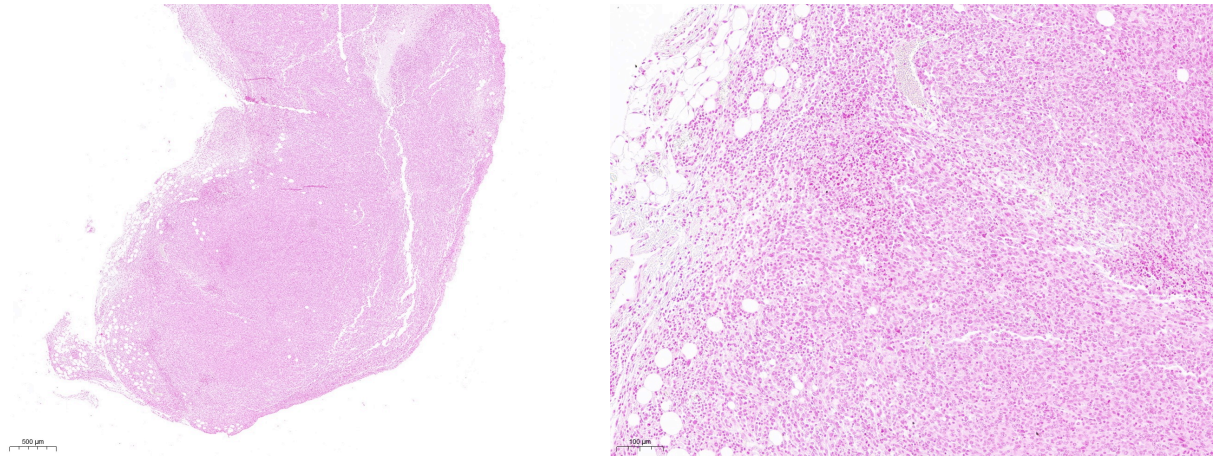


Figure 5. Histological Prussian Blue tissue staining in subcutaneous tumor models after intravenous administration of ultramagnetic liposomes and without magnet application.

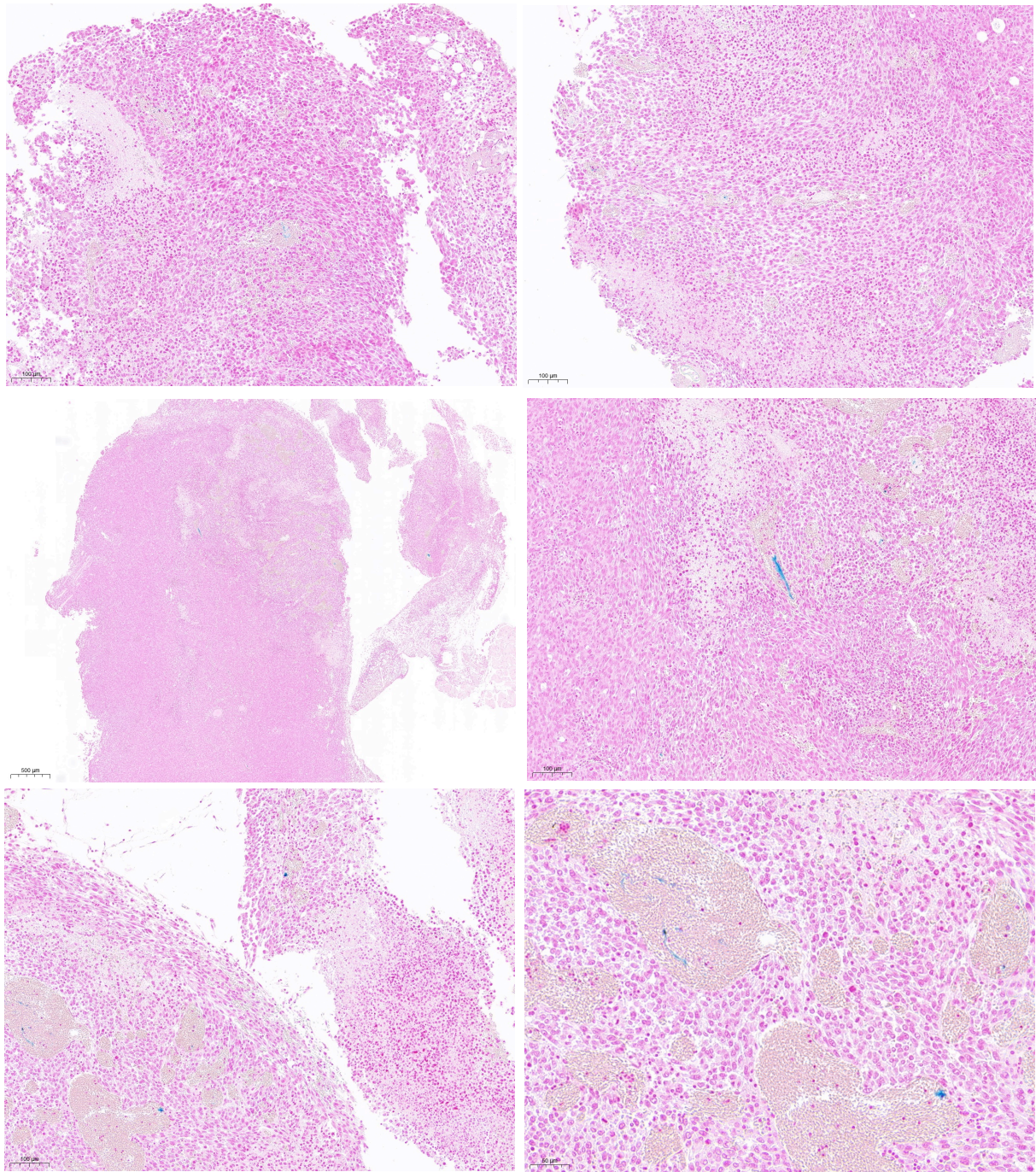
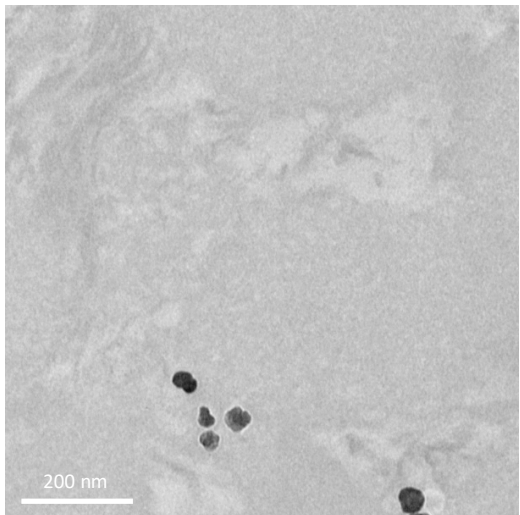
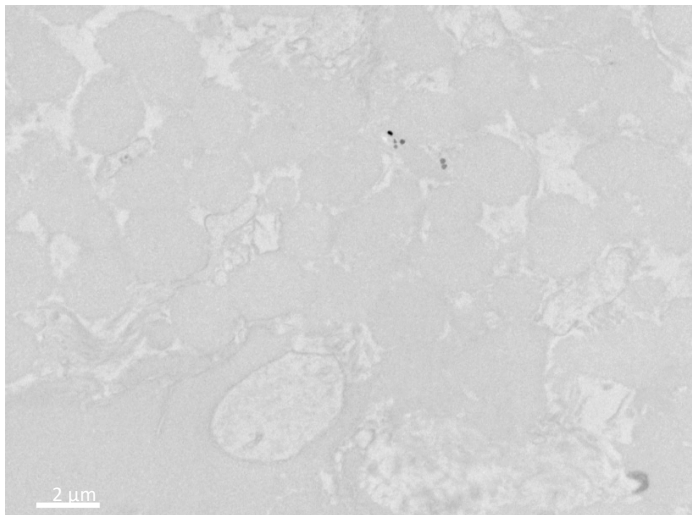
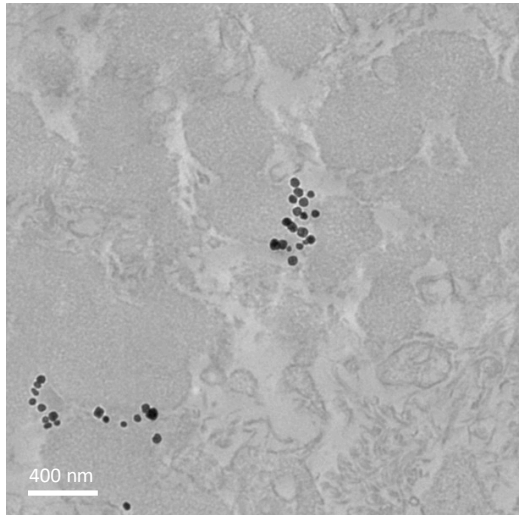
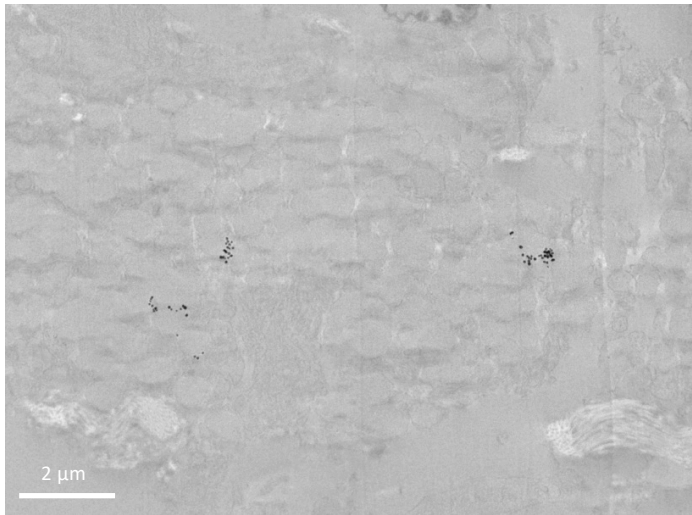
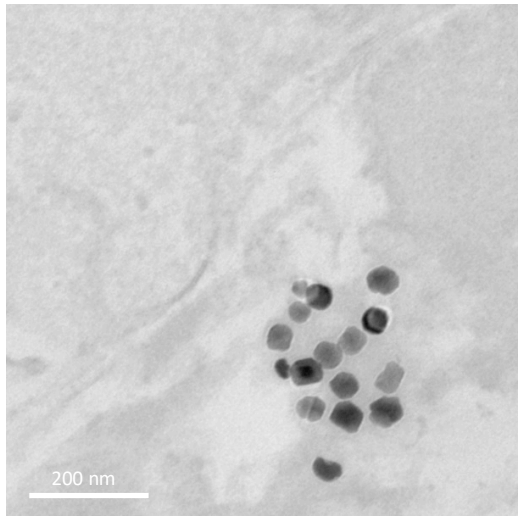
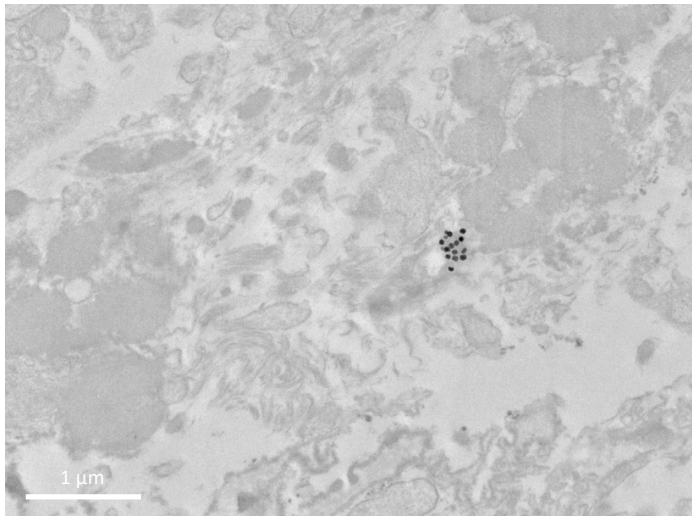


Figure 6. Histological Prussian Blue tissue staining in orthotopic tumor models after intravenous administration of ultramagnetic liposomes and without magnet application.



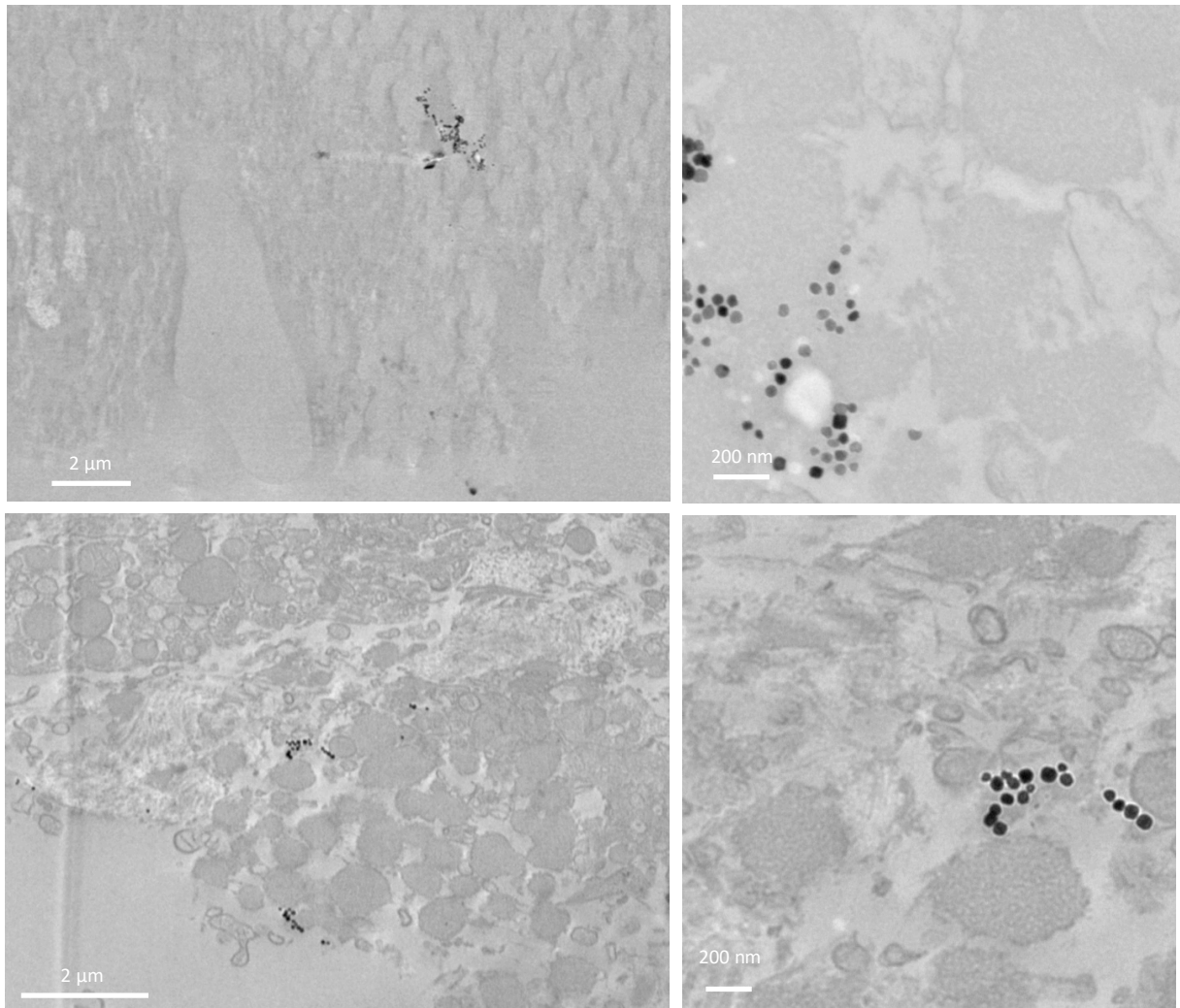


Figure 7. Transmission electron microscope imaging of orthotopic tumor models after intravenous administration of magnetosomes and upon magnet application.

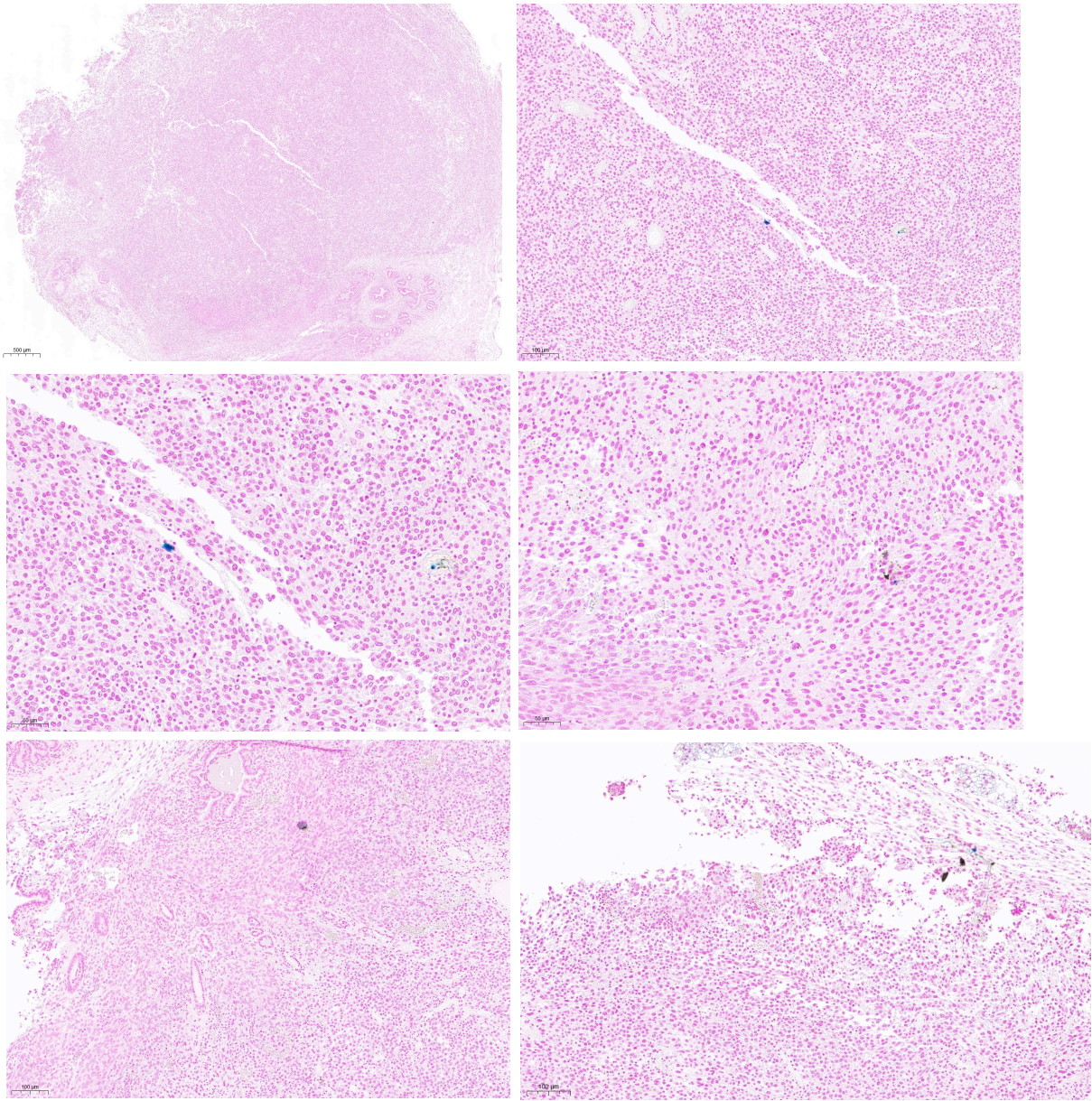


Figure 8. Histological Prussian Blue tissue staining in orthotopic tumor models after intravenous administration of magnetosomes and upon magnet application.

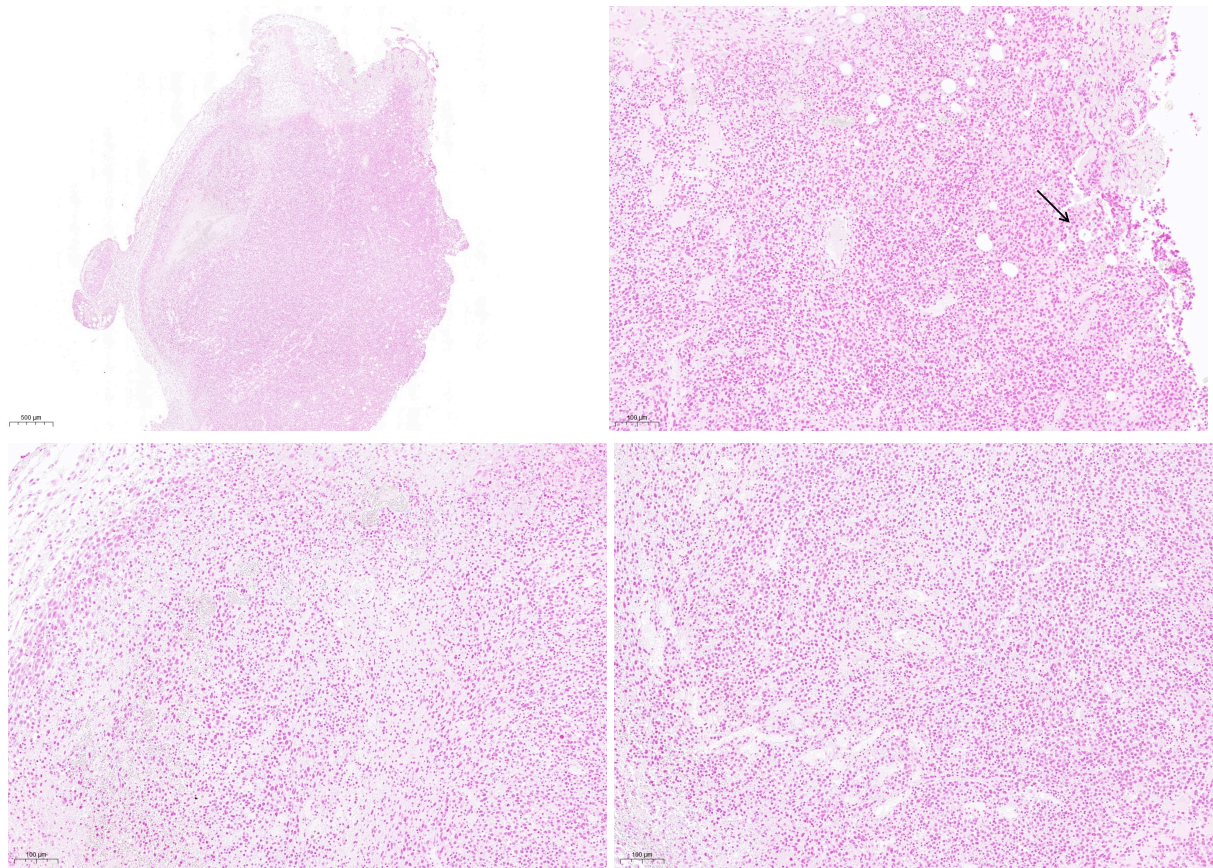


Figure 9. Histological Prussian Blue tissue staining in subcutaneous tumor models after intravenous administration of magnetosomes and without magnet application.

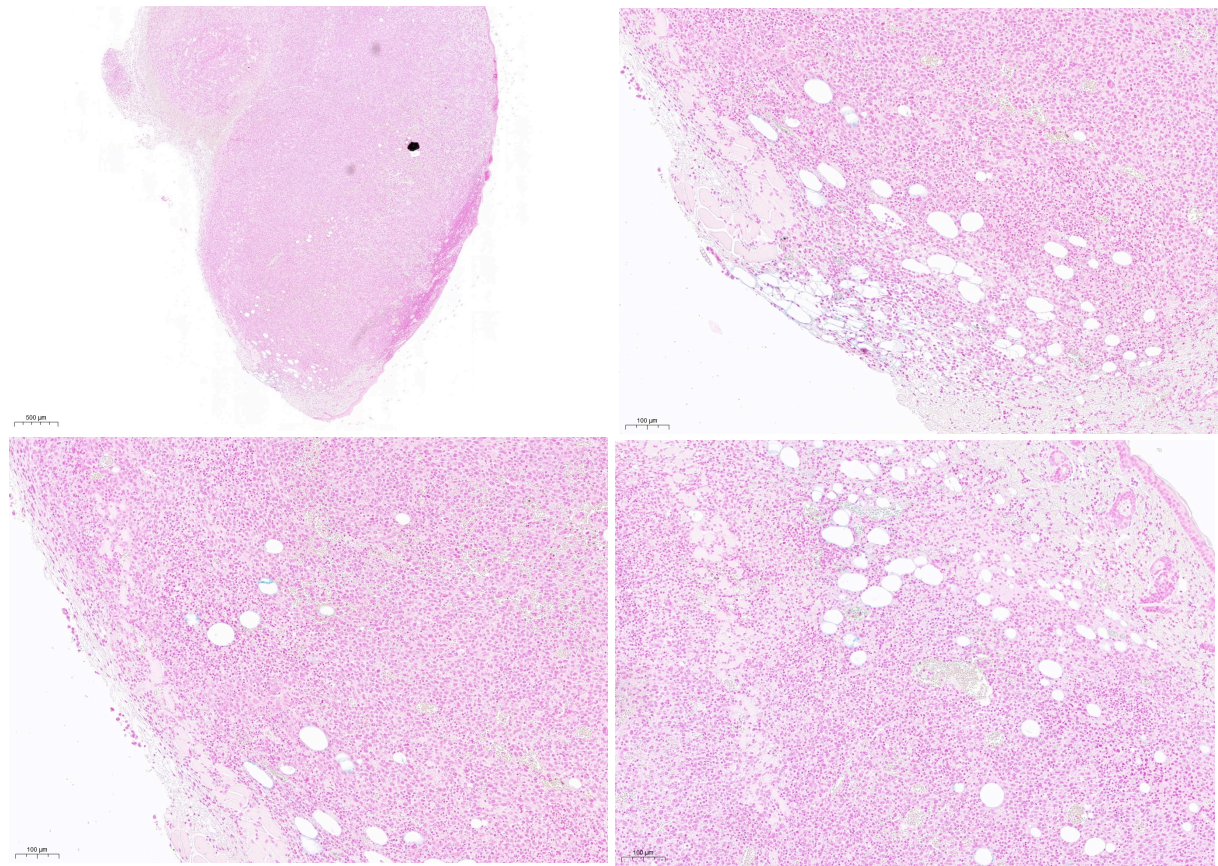


Figure 10. Histological Prussian Blue tissue staining in orthotopic tumor models after intravenous administration of magnetosomes and without magnet application.

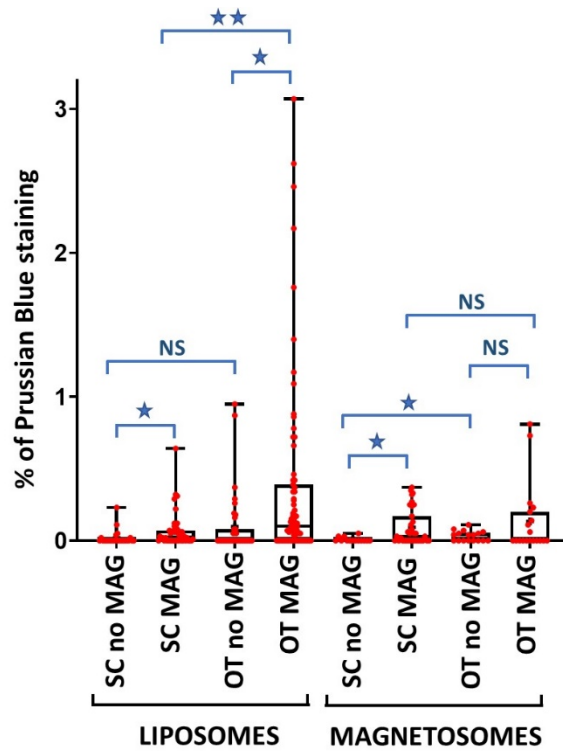


Figure 11: Prussian Blue quantification of nanoparticle presence in SC and OT tumor models with and without magnetic targeting. Quantification was done on whole histological tumor section image areas of $78400 \mu\text{m}^2$ ($320 \mu\text{m} \times 245 \mu\text{m}$). For each image, the Prussian Blue area was measured and divided by the total image area, providing the % of occupied area by the nanoparticles. Each measurement is shown as an independent red circle in the graph. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ and NS (non-significant) for $p > 0.05$.



Figure 12. Microsurgery procedure for the cell injection within the prostate in order to generate the orthotopic prostate model. Bottom right image shows the magnet application procedure followed for tumor targeting of both the ultramagnetic liposomes and magnetosomes nanoparticles.